

<p align="center"><b>DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT</b> Housing - Federal Housing Commissioner</p> <p><b>TO: DIRECTORS, SINGLE FAMILY HOCs</b> <b>DIRECTORS, MULTIFAMILY HUBs</b></p>	<p><b>STRUCTURAL ENGINEERING BULLETIN NO. 785 Rev. 12</b> (Supersedes issue dated May 23, 2007)</p>				
	<p><b>ISSUE DATE</b> October 14, 2010</p>				
	<p><b>REVIEW DATE</b> October 14, 2013</p>				
<p><b>SUBJECT:</b></p> <table border="0"> <tr> <td><b>1. Item Description</b></td> <td>Shop Fabricated Wood Frame Modular Dwelling Unit</td> </tr> <tr> <td><b>2. Name and address of Manufacturer</b></td> <td>All American Homes, LLC 2831 Dexter Drive Elkhart, IN 46515</td> </tr> </table>		<b>1. Item Description</b>	Shop Fabricated Wood Frame Modular Dwelling Unit	<b>2. Name and address of Manufacturer</b>	All American Homes, LLC 2831 Dexter Drive Elkhart, IN 46515
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This Structural Engineering Bulletin (SEB) should be filed with other SEBs and related Bulletins on materials or products as required by prescribed procedures.

The technical description, requirements and limitations expressed herein do not constitute an endorsement or approval by the Department of Housing and Urban Development (HUD) of the subject matter, and any statement or representation, however made, indicating approval or endorsement by HUD is unauthorized and false, and will be considered a violation of the United States Criminal Code, 18 U.S.C. 709.

**NOTICE: THIS BULLETIN APPLIES TO DWELLING UNITS BUILT UNDER HUD HOUSING PROGRAMS. NON-HUD-INSURED UNITS MAY OR MAY NOT BE IN CONFORMINTY WITH THE REQUIREMENTS OF THE HUD MINIMUM PROPERTY STANDARDS.**

Any reproduction of this Bulletin must be in its entirety and any use of all or any part of this Bulletin in sales promotion or advertising is prohibited.

1. General:

This Bulletin sets forth specific requirements under the Technical Suitability of Products Program for determining the eligibility of housing to be constructed under HUD mortgage insurance, or other HUD housing programs.

2. Scope:

This Bulletin applies only to the structural features of this method of construction. Final determination of eligibility is made by the appropriate HUD Homeownership Center. Other factors considered will be valuation, location, architectural planning and appeal, mechanical equipment, thermal characteristics, and market acceptance. Consideration is also necessary to determine whether a specific property will qualify under the specific HUD program, when constructed according to the method outlined in this Bulletin, and where the structure is to be located.

3. MINIMUM PROPERTY STANDARDS (MPS):

Compliance with HUD Minimum Property Standards (MPS) will be determined by the HUD HOC on the same basis as submissions involving conventional construction, except for the special features described in this Bulletin.

4. INSPECTION:

Field compliance inspections covering conventional items of construction and any special features covered in this Bulletin shall be made in accordance with prescribed procedures.

The appropriate HOC shall furnish a copy of a HUD field inspection report to Headquarters, FHA Standards, Office of Manufactured Housing Programs, when there is:

- a. Evidence of noncompliance with portions of the system of construction described in this Bulletin.
- b. Faulty shop fabrication, including significant surface defects.
- c. Damage to shop fabricated items or materials due to improper transportation, storage, handling or assembly.
- d. Unsatisfactory field workmanship or performance of the product or system.
- e. Any significant degradation or deterioration of the product or evidence of lack of durability or performance.

Periodic plant inspections will be made by HUD designated representatives in accordance with their prescribed procedures. Factory inspection reports shall be submitted to HUD Headquarters, upon request.

5. CERTIFICATION:

The manufacturer named in this Bulletin shall furnish the builder with a written certification stating that the product has been manufactured in compliance with the HUD Minimum Property Standards (MPS), except as modified by this Bulletin. The Builder shall endorse the certification with a statement that the product has been erected in compliance with the HUD MPS except as modified by this Bulletin, and that the manufacturer's certification does not relieve the Builder, in any way, of responsibility under the terms of the Builder's Warranty required by the National Housing Act, or under any provisions applicable to any other housing program. This certification shall be furnished to the HUD HOC upon completion of the property.

**OUTLINE DESCRIPTION, CATEGORY II CONSTRUCTION:**

**GENERAL:**

Shop fabricated one story wood frame modular dwelling units, up to 32 feet wide and up to 60 feet in length are furnished in this method of construction. Units are factory finished on both the interior and exterior. Units are transported to the building site where they are set on conventional foundations and joined together.

Construction is conventional wood framing and may include various interior and exterior finish materials. All materials and methods of installation shall be in accordance with HUD Minimum property Standards, Use of Materials Bulletins (UM) and Material Releases (MR), except as may be specifically noted herein. Plumbing, heating-and electrical systems are shop installed and field connected.

This bulletin is based on structural review of the shop-fabricated components of the Willow Ridge Series (MFG 3260 3 2 SP RK STD) model of All American Homes, LLC. but may be considered applicable to all structurally similar units of this company. Foundation design and nonstructural items (such as architectural, plumbing, heating and electrical features) are not covered by this bulletin.

**SPECIFICATIONS:**

Form HUD-92005, "Description of Materials" specifying only the structurally related items (Nos. 1 to 12, 14, 26, and 27), as originally submitted for determination of technical suitability, describes the materials that shall be used in construction of housing units under this system of construction.

**DRAWINGS:**

The following drawing(s) by All American Homes, LLC, shall be considered an integral part of this Bulletin:

<b><u>Drawing Page No.</u></b>	<b><u>Date</u></b>	<b><u>Revision</u></b>	<b><u>Description</u></b>
S-0	04/01/10		Cover Page
S-0.1	04/01/10	02/15/10 Updated Codes	HUD Index
S-2	10/07/05		Stair Details
S-3	01/19/07	04/21/06 Add Double Joist Support Note 11/14/06 Basement Stair Header Info.	Typical Floor Framing

S-3.1	11/17/08		1 <sup>st</sup> Floor Blocking For Foundation Wall Lateral Support
S-4	11/01/02		Floor Framing
S-4.1	11/01/02		Floor Framing
S-4.2	11/01/02		Floor Framing
S-4.3	11/01/02		Floor Framing
S-4.4	11/01/02		Floor Framing
S-4.5	09/09/04		Detail Package
S-5	10/11/06	10/11/06 Roof Panel Rating	Typical Roof / Ceiling Framing
S-6	11/01/02		Ceiling / Truss Framing
S-6.1	11/01/02		Ceiling / Truss Framing
S-6.2	11/01/02		Ceiling / Truss Framing
S-6.3	02/02/07		Roof Tie-In and Gables
S-6.4	02/02/07		Roof Tie-In and Gables
S-8	07/26/07	10/05/05 – Mat Wall Sheathing Detail Rev. 11/09/05 – Vaulted Truss Detail 02/01/06 – Relocate Details on S-8, S8.1 & Add 3-Wide 12/20/06 – 41’-6 Wide 60#, 24’ K42 Info 5/22/07 – 24’ Wide 20# & 60# K42 Info 07/26/07 – Add 47’-6 Wide Info	Interior Wall Details
S-8.1	01/01/06	02/01/06 – Relocate Details on S-8 & S-8.1	Interior Wall Details
S-11	05/01/07	10/12/06 – Additional Notes 05/01/07 – Top Plate Notes	Exterior Wall Details
S-12	09/20/04	08/02/06 – APA Narrow Wall Info and Notes 02/08/07 – Braced Wall Line Offset Info	Wall Bracing (Low Hazard Regions)
S-12.1	11/28/06	02/22/08 – Revised Border	Shear walls and Hold Downs in Lieu of Wall Bracing
S-14	11/01/02	08/26/04	Room Additions
S-14.1	11/01/02	08/26/04	Room Additions
S-21	08/06/04	10/04/05 – Added Nail Splice Note to All Overhead Options	Attic Air Space Detail and Hinged Overhang Connection Options

S-22	12/12/04	11/05/08 – 10' Horiz. Info, Draft stopping Info. & New Border Added	Fireblocking Details
S-22.1	12/02/08	03/16/09 – Wood Beam Penetration	Penetration in Fire-Rated Assemblies
S-25	08/10/04	04/27/06 Insulation Note Revision 09/22/06 – Vinyl Siding, Shingle Specs 12/20/06 – Arrestor, Tub Valve, Housewrap, Flashing 12/19/07 – elec heat notes 02/22/08 – new border 04/15/08 – water-resistive barrier 02/16/09 – flame spread, Insul. notes	Specification
S-26	08/03/06	02/28/07 – 1 ¾ Staples, Spacing 02/22/08 – New Border	Fastening Schedule
S-27	01/01/04	08/14/07 – DO & KY Revision 02/25/08 – new border	Seismic Design
S-28	08/06/04	10/27/06 – applicable for most states 08/27/07 – new border, pipe support 08/12/08 – trap to vent revisions 10/20/08 – WI ice barrier note	General Notes & Misc. Reqmts
S-28.1	08/06/04	06/06/07 – MN Code update 09/27/07 – SC S.D. note 03/17/08 – Moved SC notes to next page, new border, FL carbon monoxide note 04/17/08 – WI & IL update 07/21/08 – VA update 11/18/08 – FL update 04/28/09 – WI & MN update	General Notes & Misc. Reqmts

S-28.2	08/06/04	12/19/07 – GA revision 02/21/08 – SC notes, new border 04/17/08 – NC 08 NEC note 07/09/09 – NC, GA Rodent Proofing 09/16/08 – NC floor seal note 09/30/08 – 2006 IRC Note 12/11/08 – GA revision 03/17/09 – NC notes 5 and 8 04/29/09 – Iowa Notes#2 02/11/10 – 2009 IRC note, IA #3	General Notes & Misc. Reqmts
S-29	01/01/04	08/09/07 – 06 IRC Code update 02/25/08 – new border	Foundation Notes & Details
Trusses	04/21/10		MOUSR411 10111003
Trusses	04/16/10		MOUSR411 101006010
Trusses	04/16/10		MOUSR411 101006004
Trusses	04/16/10		MOUSR411 101006008

The following calculation is part of this SEB:

AC10027 MFB 3260 3 2 SB RK STD

The Builder shall submit construction drawing(s) to the Homeownership Center with each application under HUD housing programs, which shall include the same or similar structural features as shown on the drawings listed above. Copies of these listed drawings shall also be furnished to the HUD Homeownership Center by the Builder upon request.

DESIGN AND CONSTRUCTION REQUIREMENTS:

Design Loads: The method described in this Bulletin is based on maximum design loads of 30 and/or 60 psf for snow, Seismic Zone 2, and a Basic Wind Speed of 80 mph and Exposure C in accordance with ASCE 7-88. The Builder shall submit structural calculations to the HUD Homeownership Center if housing units are to be located in geographical areas where these conditions are exceeded.

Framing of Loadbearing Walls: Wood-to-wood connections shall be provided between bearing walls and roof/ceiling or floor construction. Floor covering, including carpeting and vinyl tile, shall not be continued under loadbearing walls.

Trusses shall be designed and constructed in accordance with ANSI/TPI 1-1995 Standard (American National Standards Institute and Truss Plate Institute), "National Design Standard for Metal Plate Connected Wood Construction."

MANUFACTURING PLANTS:

Housing units covered under this bulletin will be produced in the following plants:

All American Homes of Indiana, LLC  
1418 S. 13th Street  
Decatur, IN 46733  
Contact: Curt Witte  
Tel: 260-724-9171

All American Homes of Iowa, LLC  
1551 15th Avenue SE  
Dyersville, IA 52040  
Contact: John Meyer  
Tel: 563-875-2421

All American Homes  
of North Carolina LLC  
2015 US 221 South & US 74 West  
Rutherfordton, NC 28139  
Contact: Neil Sayers  
Tel: 828-245-2140

All American Homes of Colorado, LLC  
3333 East Center Drive  
Milliken, CO 80543  
Contact: Allan Rader  
Tel: 970-587-0544

QUALITY CONTROL:

The appropriate HUD Homeownership Center in whose jurisdiction the manufacturing plant is located, or the State Agency (in Category III states) shall review and approve plant fabrication procedures and quality control program, to ensure compliance with approved plans and specifications. The quality control program shall include field erection or supervision by All American Homes, LLC.

A third-party quality assurance agency that is certified by either HUD or the State in which the production facility is located in shall be responsible for assuring:

- i. That the plant is capable of following the quality control procedures set out in the quality assurance manual to be followed in that plant;
- ii. That the plant continues to follow the quality assurance manual;
- iii. That any part of any home to be produced under this SEB that it actually inspects conforms with the design;
- iv. That whenever it finds a home to be produced under this SEB in production which fails to conform to the design, the failure to conform is corrected before the home to be produced under this SEB leaves the manufacturing plant; and

- v. That if a failure to conform to the design is found in one home, all other homes still in the plant which the third-quality assurance audit records or the records of the manufacturer indicate might not conform to the design and, if necessary, brought up to the design before they leave the plant.

The third-party quality assurance agency shall carry out ongoing surveillance of the manufacturing process in the plant. The third-party quality assurance agency shall be responsible for conducting representative inspections to assure that the manufacturer is performing its quality control program pursuant to and consistent with its quality assurance manual and to assure that whatever part of a home to be produced under this SEB is actually inspected by the third-party quality assurance agency is fully in conformance with the design.

The surveillance visits shall commence on which the third-party quality assurance agency determines they must commence so that the third-party quality assurance agency can assure that every home to be produced under this SEB is inspected in at least one stage of its production. The frequency of subsequent visits to the plant shall continue to be such that every home produced under this SEB is inspected at some stage in its production. In the course of each visit, the third-party quality assurance agency shall make a complete inspection of every phase of production and of every visible part of every home to be produced under this SEB which is at each stage of production. The inspection shall be made to the approved design.

The third-party quality assurance agency shall assure that no label is placed on any manufactured home which it finds fails to conform with the approved design in the course of these inspections and shall assure that no labels are placed on other home to be produced under this SEB still in the plant which may also not conform until those homes are inspected and if necessary corrected to the design.

#### IDENTIFICATION:

##### Serial Numbers:

A serial number shall be assigned to each unit manufactured under this SEB, and shall be entered in the permanent records of the manufactured before the start of fabrication. Records of serial numbers shall be available to the HUD inspector upon request. The serial number must be conspicuous (by stencil, placard, etc.) on the unit at all stages of construction, as notice that the work shall meet pertinent HUD requirements.

##### Data Plates:

1. Completed units shall be identified by a serially numbered, permanent plate affixed near the main electrical panel or other readily accessible location before shipment from the factory.



2. The permanent data plate must show the manufacturer's name and address, date of completion in factory, design loads for wind, snow, and seismic category, and the energy code.
3. The permanent data plate must include this Bulletin number.

MANUFACTURER RESPONSIBILITIES:

- A. Produce, identify and guarantee the components in strict accordance with the terms of the acceptance document, including referenced drawings, specifications, and quality control procedures.
- B. Control the transportation, field erection and installation of the component, and monitor these operations for compliance with the MPS, accepted quality control program, and other acceptance documents.
- C. Comply with all HUD certification requirements.
- D. Correct all poor performance, failure, or manufacturing defects reported to, the sponsor by HUD. If correction is not made as soon as practicable, the acceptance document may be canceled.
- E. For at least a year after issuance, compile a list of all properties in which the component or system has been used.
- F. The list shall include the address or description of the location of the units, and the date of installation or erection.
- G. Upon request, this list must be submitted for review by HUD.
- H. Inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or materials used in the product, corporate structure, address or name or affiliation of the prime manufacturer or sponsor.

RECORD OF PROPERTIES:

When requested, provide the FHA Standards, Office of Manufactured Housing Programs, HUD Headquarters, with a representative list of properties in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

NOTICE OF CHANGES:

The manufacturer shall inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or materials used in this product. Further, the manufacturer must inform HUD of any revision to corporate structure, change of address or change in name or affiliation of the prime manufacturer. Failure of the manufacturer to notify HUD of any of the above changes may result in cancellation of this Bulletin.

EVALUATION:

This SEB is valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this SEB shall apply for a renewal or revision 90 days prior to the Review Date printed on this SEB. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development  
FHA Standards, Office of Manufactured Housing Programs  
451 Seventh Street, SW, Room 9168  
Washington, DC 20410-8000

Additionally, the appropriate User Fee shall be sent to:

U. S. Department of Housing and Urban Development  
Miscellaneous Income - Technical Suitability of Products Fees  
Bank of America  
P. O. Box 198762  
Atlanta, GA 30384-8762

The holder of this SEB may apply for revision at any time prior to the Review Date. Minor revisions may be in the form a supplement.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program", and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the SEB. HUD will notify the manufacturer that the SEB may be canceled when:

1. Conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,

2. The manufacturer has changed its organizational form without notifying HUD, or
3. The manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the SEB should not be canceled. No refund of fees will be made on a canceled document.

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This Structural Engineering Bulletin is issued solely for the captioned firm and is not transferable to any person or successor entity.  
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